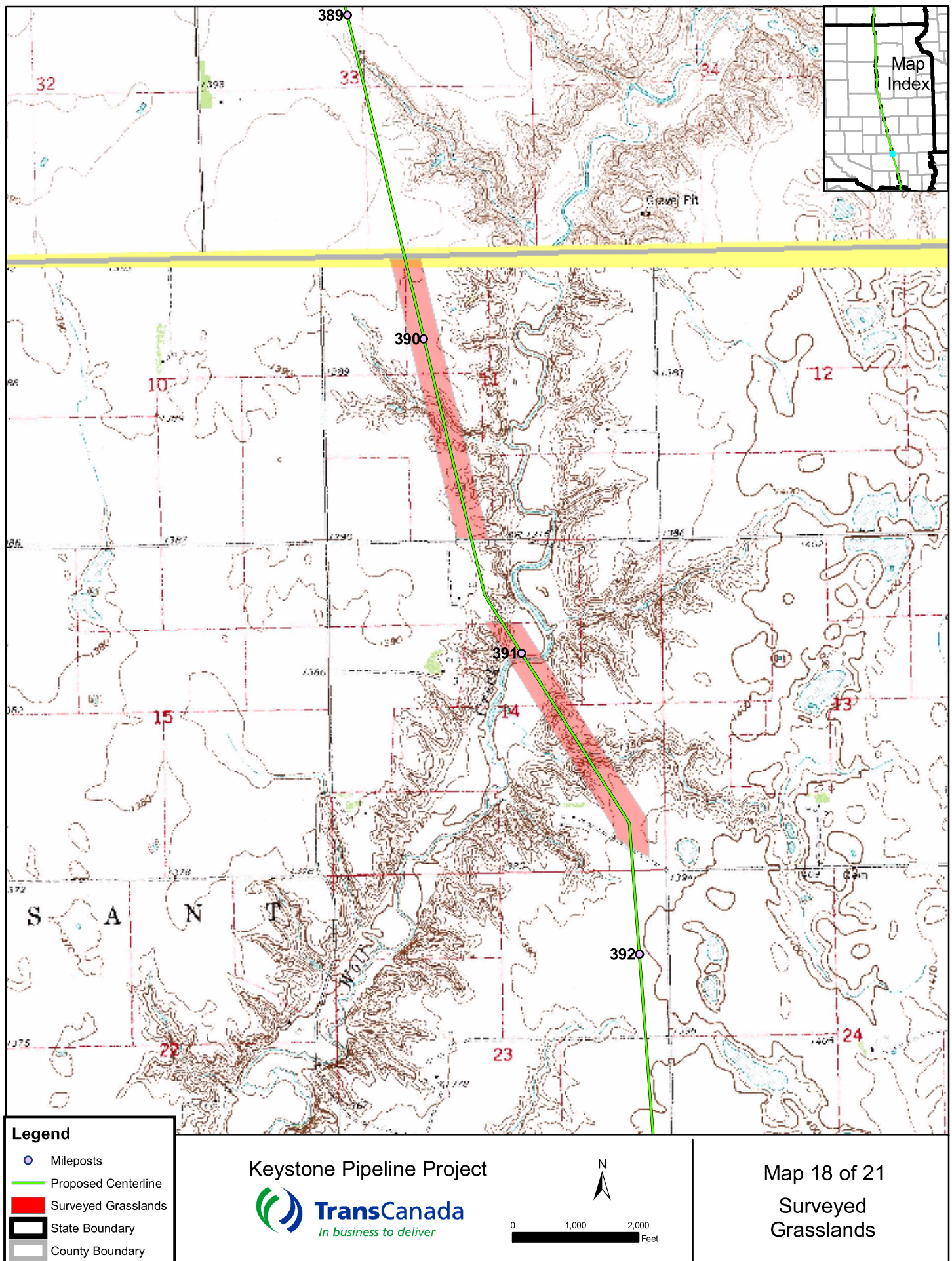




Feature TDH1SDHU002: Effects of grazing on prairie habitat. Note the difference between the moderately grazed pasture to the left, and the nearly ungrazed pasture to the right.



Feature ID	Survey Date	Start MP	End MP	County	State	Survey Type	Habitat Quality	Suitable T&E Habitat?
TDH1SDYA006	9/15/2006	418.7	419.2	Yankton	SD	Site Visit	Medium	No

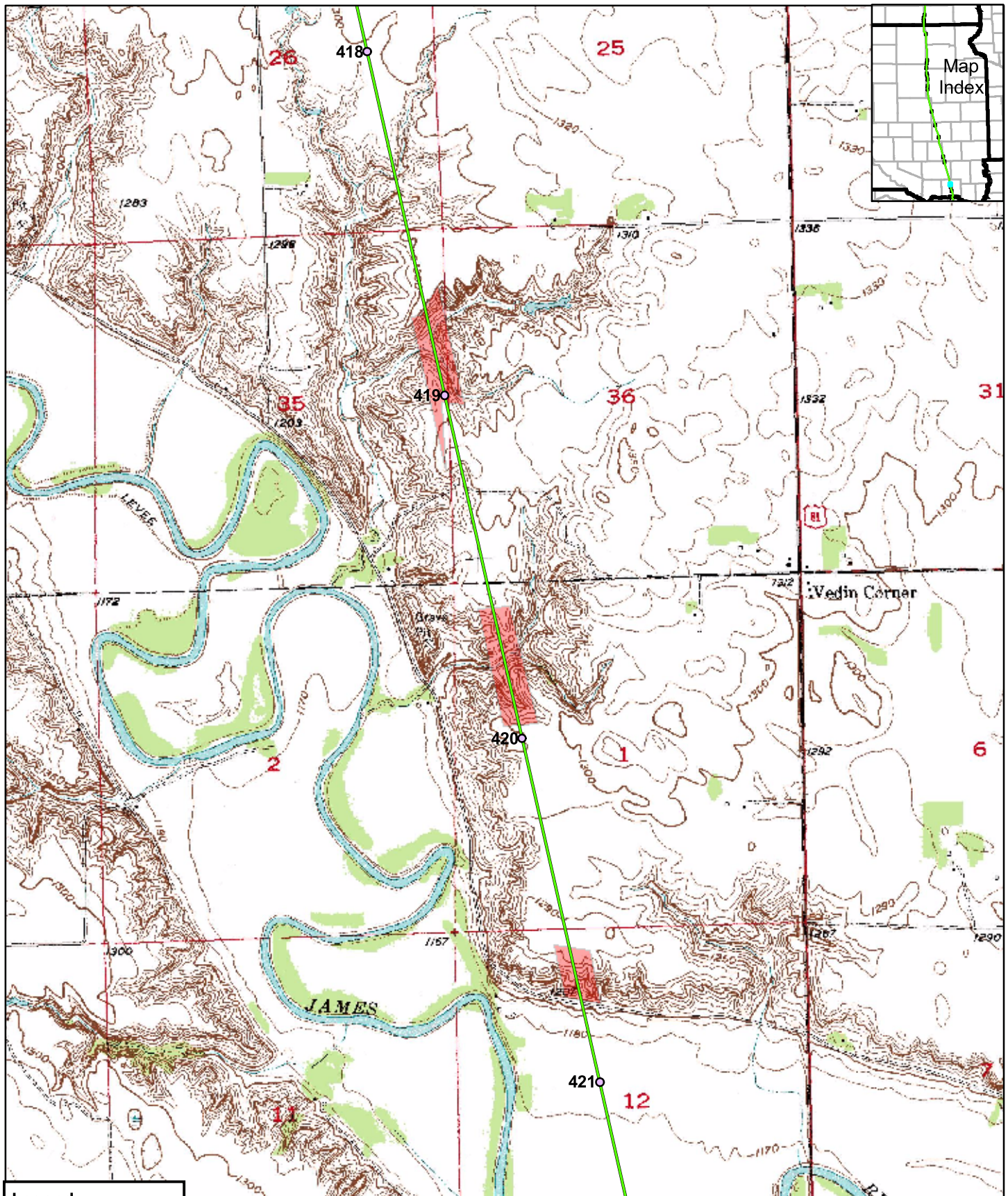
Site Summary: This is a smooth brome (*Bromus inermis*) and blue grass (*Poa cf. pratensis*) dominated pasture with wet swale areas and upland ridges. Cedar trees (*Juniperus scopulorum*) are common in the ravines. Also common in the more mesic areas are three exotic plants: plumeless thistle (*Carduus acanthoides*), horseweed (*Conyza canadensis*), and yellow sweet clover (*Melilotus officinalis*). However, there are patches of native grassland present on the upland ridges.



Feature TDH1SDYA006: Overview of site to the north. In the foreground is a plumeless thistle (*Carduus acanthoides*).



Feature TDH1SDYA006: A smooth brome (*Bromus inermis*) dominated pasture area.



Legend

- Mileposts
- Proposed Centerline
- Surveyed Grasslands
- State Boundary
- County Boundary

Keystone Pipeline Project



0 1,000 2,000
Feet

Map 19 of 21
Surveyed
Grasslands

Feature ID	Survey Date	Start MP	End MP	County	State	Survey Type	Habitat Quality	Suitable T&E Habitat?
TDH1SDYA005	9/15/2006	419.6	420	Yankton	SD	Site Visit	High	Yes, Dakota skipper

Site Summary: This site has high quality upland areas with the native black Sampson (*Echinacea angustifolia*), junegrass (*Koeleria micrantha*), blue grass (*Bouteloua gracilis*), prairie dropseed (*Sporobolus heterolepis*), etc. Cedar trees (*Juniperus scopulorum*) are common in the ravines. There are lowland spots with brome grass (*Bromus inermis*) and bindweed (*Convolvulus arvensis*).



Feature TDH1SDYA005: Native grassland ridge with cedar (*Juniperous scopulorum*) in the ravines.



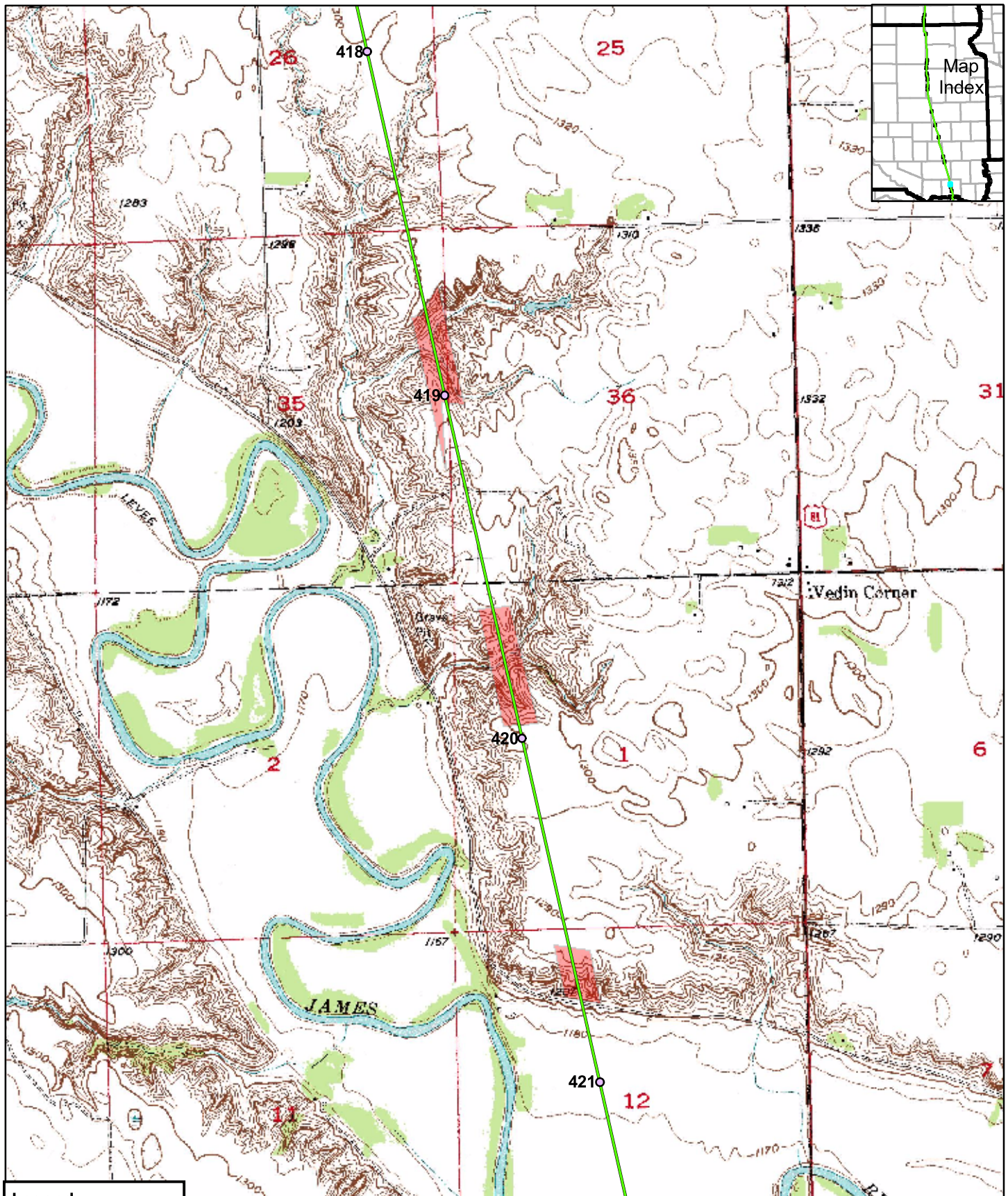
Feature TDH1SDYA005: Native grassland ridge with cedar (*Juniperous scopulorum*) in the ravines.



Feature TDH1SDYA005: Cedar (*Juniperous scopulorum*) trees have been cut an left in these ravines



Feature TDH1SDYA005: This site has the most junegrass (*Koeleria macrantha*) of any site visited.



Legend

- Mileposts
- Proposed Centerline
- Surveyed Grasslands
- State Boundary
- County Boundary

Keystone Pipeline Project



0 1,000 2,000
Feet

Map 19 of 21
Surveyed
Grasslands

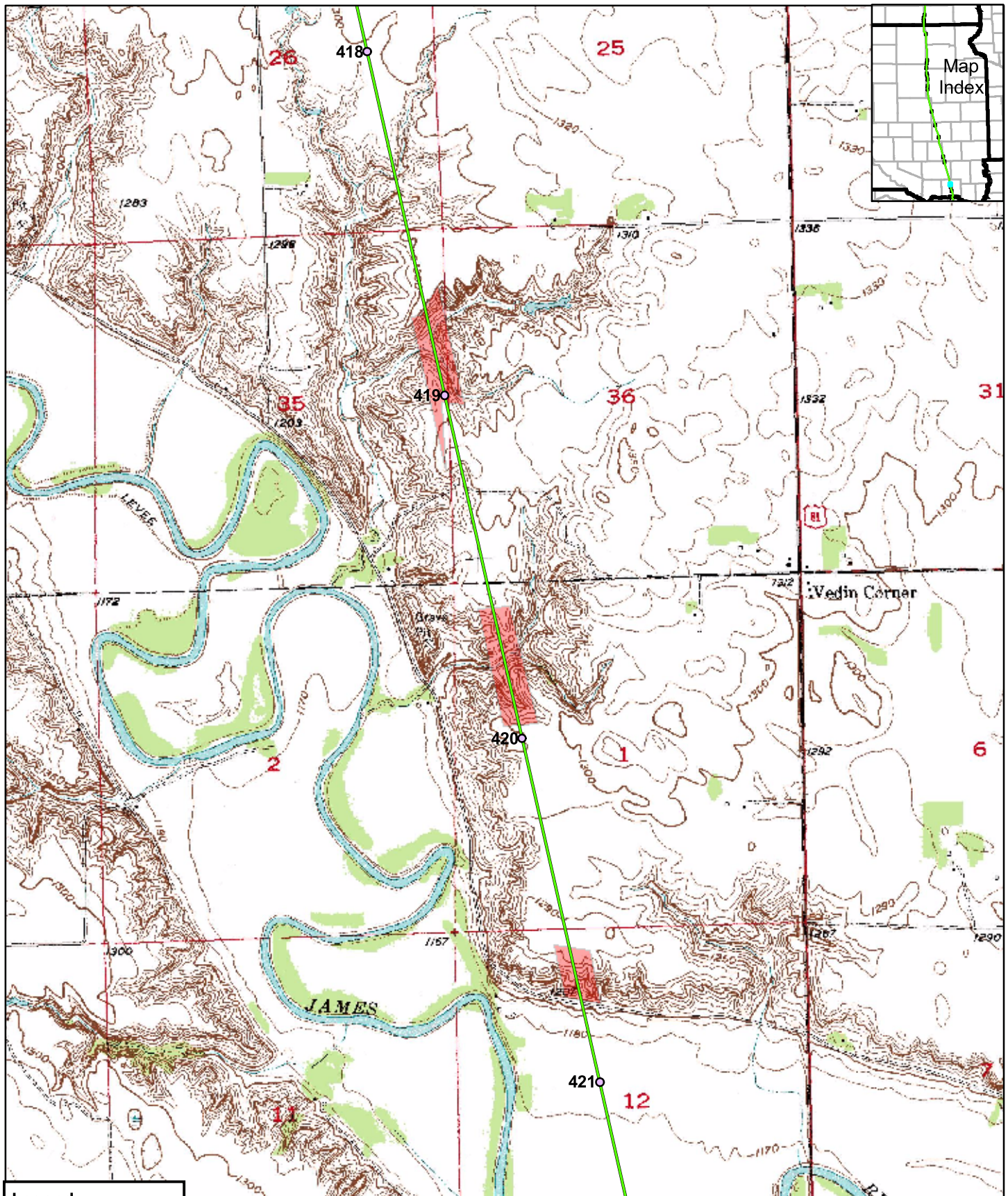
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Feature ID	Survey Date	Start MP	End MP	County	State	Survey Type	Habitat Quality	Suitable T&E Habitat?
TDH1SDYA004	9/15/2006	420.6	420.8	Yankton	SD	Drive By	High	Yes, Dakota skipper

Site Summary: This is a moderately grazed, high quality grassland site for the Dakota Skipper. It is adjacent to fairly large areas of native grassland. It has unplowed hillsides with a good mix of native plants, including black Sampson (*Echinacea angustifolia*), side-oats grama (*Bouteloua curtipendula*) and blue gram (*Bouteloua gracilis*).



Feature TDH1SDYA004: High quality hillside grassland. View to the north.



Legend

- Mileposts
- Proposed Centerline
- Surveyed Grasslands
- State Boundary
- County Boundary

Keystone Pipeline Project



0 1,000 2,000 Feet

Map 19 of 21
Surveyed
Grasslands

Feature ID	Survey Date	Start MP	End MP	County	State	Survey Type	Habitat Quality	Suitable T&E Habitat?
TDH1SDYA003	9/15/2006	421.8	422.1	Yankton	SD	Site Visit	High	Yes, Dakota skipper

Site Summary. This grassland is at the Keystone pipeline James River crossing. Although this area has ravines filled with cedar (*Juniperus scopulorum*) and a mix of less common broadleaf trees such as box elder (*Acer negundo*) and hackberry (*Celtis occidentalis*), there are ridges between these wooded ravines that have high quality, well protected native grassland. Grasses on these ravines include prairie dropseed (*Sporobolus heterolepis*), Indian grass (*Sorghastrum nutans*), side-oats grama and blue grama (*Bouteloua gracilis*). Native forbs include black Sampson (*Echinacea angustifolia*), cusp blazing star (*Liatris mucronata*), compass plant (*Silphium laciniatum*), and hoary verbain (*Verbena stricta*). Although this area is moderately grazed and has a few exotic weeds such as burdock (*Arctium minus*), it is quality habitat for the Dakota skipper.



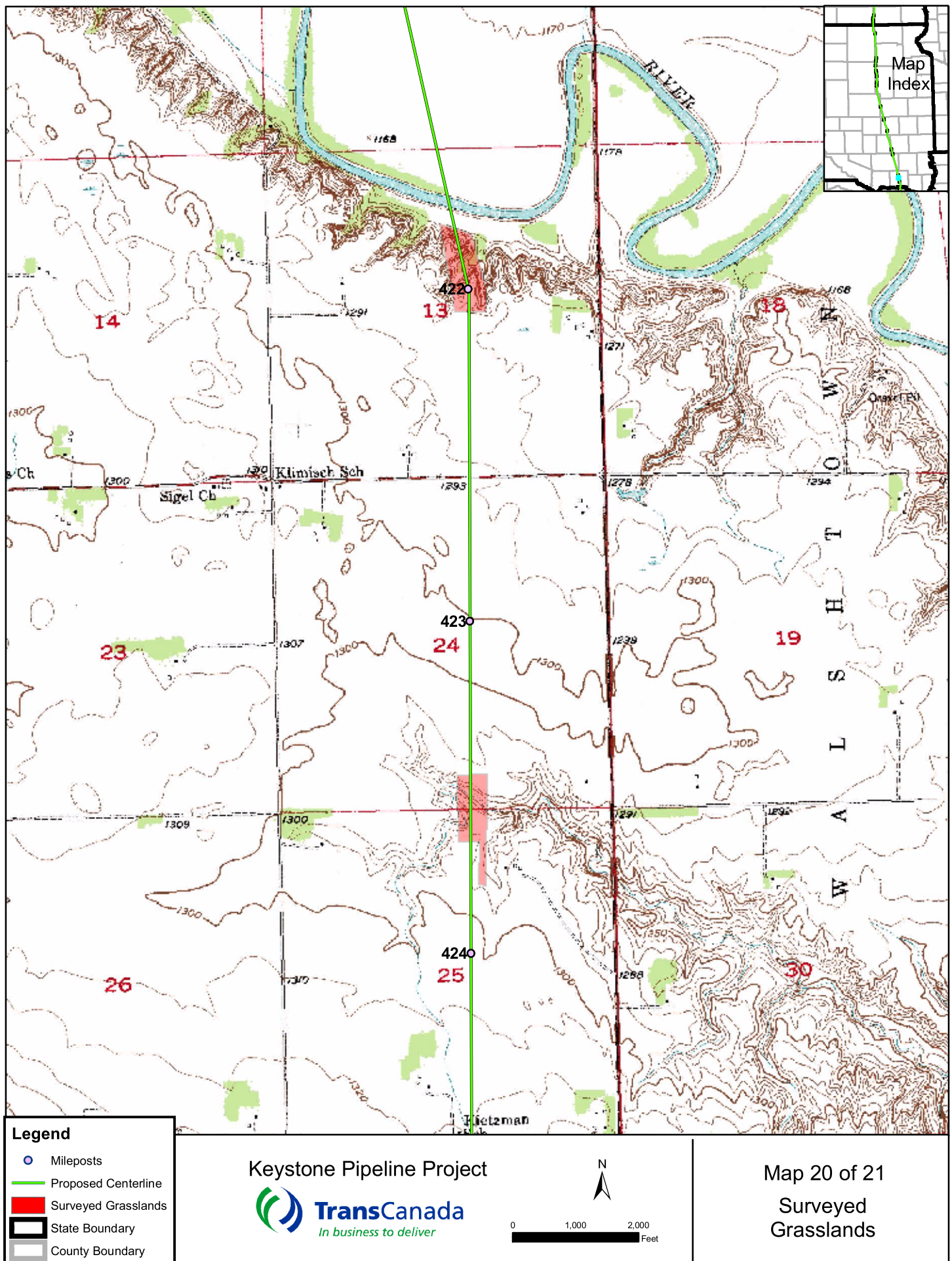
Feature TDH1SDYA003: View to the south of a ridge of native prairie.



Feature TDH1SDYA003: A ridge of native prairie with trees in the ravines near the James River.



Feature TDH1SDYA003: A close-up of ridge vegetation: black Sampson (*Echinacea angustifolia*) to the right, and a purple cusp blazing star (*Liatris mucronata*) in the center.



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Feature ID	Survey Date	Start MP	End MP	County	State	Survey Type	Habitat Quality	Suitable T&E Habitat?
TDH1SDYA002	9/15/2006	423.5	423.8	Yankton	SD	Site Visit	Medium	No

Site Summary: The lowland swales are dominated by smooth brome (*Bromus inermis*) with very few native plants. The slopes of these hills have erosion contours due to heavy grazing. The upland area near center line is heavily grazed (few native forbs). The ridges along the construction corridor are dominated by blue grama (*Boutoula gracilis*) with patches of side-oats grama (*Boutoula curtipendula*), and still contain native prairie with few exotic plants. This site would become a higher quality prairie if the grazing intensity were lowered. Due to the absence of native forbs (heavy grazing), it is currently not a high quality site.



Feature TDH1SDYA002: Heavily trampled water tank at center line, along the ridge.